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Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 1 of 2

Complete if Known

Application Number	Not assigned
Filing Date	April 18, 2001
First Named Inventor	RIESS et al
Group Art Unit	Not assigned
Examiner Name	Not assigned
Attorney Docket Number	11927/46001

09/836281
04/16/01

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY
		Number	Kind Code ² (if known)		
KML		4,847,797		PICCHI et al	7/11/89
		5,214,675		MUELLER et al	5/25/93
		5,444,712		BETTS et al	8/22/95
		5,533,050		ISARD et al	7/2/96
		5,541,964		COHEN et al	7/30/96
		5,550,924		HELF et al	8/27/96
		5,694,423		LARSSON et al	12/2/97
		5,793,807		WERNER et al	8/11/98
		5,809,074		WERNER et al	9/15/98
		5,825,832		BENEDETTO	10/20/98
✓		5,835,731		WERNER et al	11/10/98
		5,867,539		KOSLOV	2/2/99
		5,940,440		WERNER et al	8/17/99

FOREIGN PATENT DOCUMENTS

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¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

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		First Named Inventor	RIESS et al
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		Examiner Name	Not assigned
Sheet 2 of 2	Attorney Docket Number	11927/46001	

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
KW		Kwon et al, "A Blind Equalization with the Variable Decision Region", <i>Pers. Indoor and Mobile R. Comm.</i> , vol. 2, pp 322-326 (Sept. 1997)	
		Lee et al, "A Decision-Directed Blind Equalization with the Error Variance Estimation", vol. 1, pp 99-103, IEEE, (Oct. 1997)	
		Lee et al, "Convergence Analysis of the Stop-and-Go Blind Equalization Algorithm", <i>IEEE Trans. Comm.</i> , vol. 47, no. 2, pp 177-180, (Feb. 1999)	
		Xu et al, "An Improved Decision-Directed Equalization Algorithm for MQAM Modulation", <i>Chinese Journal of Electronics</i> , vol. 9, pp 45-51 (1997)	
		Xu et al, "New Decision-Directed Equalization Algorithm for QAM Communication Systems", <i>IEEE Global Telecommunications Conference 1996</i> , vol. 2, pp 1330-1334, (1996)	
		Werner et al, "Blind Equalization for Broadband Access", <i>IEEE Comm.</i> , vol. 37, no. 4, pp 87-93, (April 1999)	
		Lee et al, "Joint Blind Equalization with a Shell Partition-Based CMA for QAM Signal Constellations", <i>IEEE Int'l. Conference on Acoustics, Speech, and Signal Processing</i> , IEEE Computer Society Press, pp 2513-2516, (April 21-24, 1997)	
		Tseng et al, "A Stop-and-Go Dual-Mode Algorithm for Blind Equalization", <i>Globecom 96</i> , vol. 2, pp 1427-1431, (November 18-22, 1996)	
		Garth et al, "Blind Equalization Algorithms with Automatic Constellation Phase Recovery for Dual-Mode CAP-QAM Reception", <i>1999 IEEE Int'l. Conference on Communications</i> , vol. 3, pp 1531-1536, (June 6-10, 1999)	
		Axford et al, "A Dual-Mode Algorithm for Blind Equalization of QAM Signals: CADAMA", <i>29th Asilomar Conference on Signals, Systems & Computers</i> , vol. 1, pp 172-176, (October 30 - November 1, 1995)	
		Weerackody et al, "Dual-Mode Type Algorithms for Blind Equalization", <i>IEEE Transactions on Communications</i> , Vol. 42, no. 1, pp 22-28, (January 1994)	

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Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Complete if Known <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Application Number</td> <td>09/836,281</td> </tr> <tr> <td>Filing Date</td> <td>April 18, 2001</td> </tr> <tr> <td>First Named Inventor</td> <td>RIESS et al</td> </tr> <tr> <td>Group Art Unit</td> <td>2631</td> </tr> <tr> <td>Examiner Name</td> <td>Not assigned</td> </tr> <tr> <td>Attorney Docket Number</td> <td>11927/46001</td> </tr> </table>		Application Number	09/836,281	Filing Date	April 18, 2001	First Named Inventor	RIESS et al	Group Art Unit	2631	Examiner Name	Not assigned	Attorney Docket Number	11927/46001
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U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY
		Number	Kind Code ² (if known)		
KW		4,227,152		Godard et al	October 7, 1980

FOREIGN PATENT DOCUMENTS								
Examiner Initials*	Cite No. ¹	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ₃
		Office ³	Number ⁴	Kind Code ⁵ (if known)				

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KW		Jablon, Neil K., "Joint Blind Equalization, Carrier Recovery, and Timing Recovery for High-Order QAM Signal Constellations", <i>IEEE Transactions on Signal Processing</i> , pp. 1383-1397, Vol. 40, No. 6, June 1992	
		Johnson et al, "Blind Equalization Using the Constant Modulus Criterion: A Review", <i>Proceedings of the IEEE</i> , pp. 1927-1950, Vol. 86, No. 10, October 1998	
		Yang et al, "The Multimodulus Blind Equalization Algorithm", 1997 13 th Int'l Conference on Digital Signal Processing Proceedings, DSP 97", pp. DSP 97-127 through DSP 97-130, Volume 1 of 2, July 2-4, 1997, Santorini, Hellas (Greece)	
		Treichler et al, "Practical Blind Demodulators for High-Order QAM Signals", <i>Proceedings of the IEEE</i> , Special Issue on Blind Systems Identification and Estimation, edited by R. Liu and L. Tong, pp. 1907-1926, Vol. 86, No. 10, October 1998	
		Gertsman et al, "Symbol-by-Symbol MAP Demodulation of CPM and PSK Signals on Rayleigh Flat-Fading Channels", <i>IEEE Transactions on Communications</i> , pp. 788-799, Vol. 45, No. 7, July 1997	
		Benedetto et al, "A Soft-Input Soft-Output APP Module for Iterative Decoding of Concatenated Codes", <i>IEEE Communications Letters</i> , pp. 22-24, Vol. 1, No. 1, January 1997	
		Kenington, P.B., "Emerging Technologies for Software Radio", <i>Electronics Communication Engineering Journal</i> , pp. 69-83, Vol. 11, No. 2, April 1999	
		Porat et al, "Blind Equalization of Digital Communication Channels Using High-Order Moments", <i>IEEE Transactions on Signal Processing</i> , Vol. 39, No. 2, February 1991	

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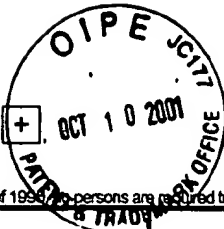
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Application Number	09/836,281
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U.S. PATENT DOCUMENTS

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KAN		Godard, Dominique N., "Self-Recovering Equalization and Carrier Tracking in Two-Dimensional Data Communication Systems", <i>IEEE Transactions on Communications</i> , Vol. Com-28, No. 11, pp. 1867-1875, November 1980	

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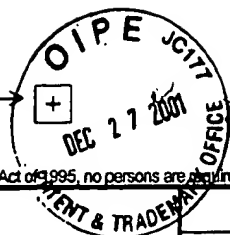
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K/A		EP	0 845 891	A2	WERNER et al	6/3/98		
J		WO	99/23795		MOLNAR, Karl	5/14/99		

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K/M ↓		5,818,876		Love	10/06/98	RECEIVED DEC 16 2002
		5,887,035		Molnar	03/23/99	
		5,229,767		Winter et al	07/20/93	
		5,742,642		Fertner	04/21/98	

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K/M ↓		EP	0 625 829	A2	AT&T Corp.	11/23/84		
		EP	1 024 631	A1	France Telecom /Telediffusion de France	08/02/00		

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K/M ↓		Kong et al, "Detection of Amplitude-Phase Modulated Signals Over Frequency Nonselective Rayleigh Fading Channels with Adaptive Symbol-Aided Channel Estimation" IEEE Vehicular Technology Conference, Atlanta, Georgia, USA, IEEE, Conf. 46, April 28-May 1, 1996, ISBN 0-7803-3158-3	
		Hoeher, Peter, "TCM on Frequency-Selective Fading Channels: A Comparison of Soft-Output Probabilistic Equalizers", Proceedings of the Global Telecommunications Conference and Exhibition (GLOBECOM), USA, New York, IEEE, December 2, 1990, ISBN 0-87942-632-2	
		Kong et al, "Adaptive MLSE of QAM Signals over Frequency Nonselective Rayleigh Fading Channels", IEE Proceedings: Communications, Great Britain, Institution of Electrical Engineers, Vol. 145, No. 6, December 1998, ISSN 1350-2425	
		Hart et al, "Maximum-Likelihood Synchronization, Equalization, and Sequence Estimation for Unknown Time-Varying Frequency-Selective Rician Channels", IEEE Transactions on Communications, USA, IEEE Inc., New York, Vol. 46, No. 2, February 1, 1998, ISSN 0090-6778	

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